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Continuous Assessment of Pupils' 'O' Level Design Project work in Technical Subjects in Secondary Schools in Zimbabwe.

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Abstract

The purpose of the study was to find out if teachers were using continuous assessment in evaluating 'O' level design project work in technical subjects in secondary schools in Zimbabwe. Data was collected from 13 teachers and 142 pupils from 5 selected secondary schools in Mashonaland West province. These were drawn from the following four technical / practical subjects: Building Studies, Metal Work, Wood Work and Technical Graphics. Two separate structured questionnaires, one for the teachers and the other for pupils, were used to collect data used to derive the findings of this study. An observation checklist was also used to collect data on selected items. The findings from this study indicate that teachers have not been using continuous assessment technique as expected by Zimbabwe Schools Examinations Council (ZIMSEC). The study establishes that improving the use of continuous assessment depends on seven deceptively simple key factors: (1) the recognition of the profound influence a marking scheme has on the motivation and self-esteem of teachers, both of which are crucial influences on implementing continuous assessment; (2) .the need for teachers to be able to interpret the marking scheme, understand its demands and how to use it; (3) the provision of workshops and in-service programmes to the teachers as routine staff development activity; (4) the active involvement of pupils in their own learning of the design activity; (5) the provision of examination / course work design themes to schools in time: at least six months in advance; (6) the provision of learning materials for making models; and (7) reducing class sizes to manageable ratios for practical subjects.

Introduction and Background

Assessment of practical subjects has evolved from a marginal position to being the foremost concern in secondary education. The evolution of assessment especially of practical subjects like Building studies, Metal work, Woodwork and Technical Graphics has moved from a vague concept to articulated procedures (Ahman and Glock,1975; Chinyamunzore ,1989 ; Clarke, 2005). Furthermore, there is considerable conformity of assessment of examination processes and procedures across national boundaries in related disciplines and the tendency to teach what is examined (Cullingford.1997).

Brady (1997) says assessment of pupils work enhances the effectiveness and professional role of teachers. Effective teacher control of the syllabus content, examination processes and interpretation of the marking criteria is the basis on which the ZIMSEC 'O' level design project assessment stands. It is important to understand why it is so.

One essential requirement for ZIMSEC to award a grade in the technical subject on completion is the submission of the course work project mark to the examining board. The coursework mark is a "value judgement" of the project work, initially marked by the teacher and moderated by an external examiner appointed by ZIMSEC.

A project examination question paper in the form of a design brief is usually sent to schools between November and December when pupils are in form three. Project work should commence during the first term of form four and completed by the end of July of the same year following which moderation of projects takes place. The coursework usually consists of a design log book and a completed artifact. It is expected that teachers teach, supervise and mark pupils' work before final moderation. The ZIMSEC "O" level syllabus marking presupposes on going assessment and to this end, teachers are provided with a marking scheme when the design brief (examination question) is circulated to schools.

Teachers are expected to use the continuous assessment technique on 'O' level design project work. It is envisaged that teachers create an opportunity to assist pupils learn and develop design skills. This takes place within the limitations of a congested school curricula. This is a challenge to most teachers given the demands linked with managing time, increased work loads, large classes (high teacher pupil ratio) against meagre resources.

To meet the requirements of the design log-book, production of a functional model and submission of marks to ZIMSEC, teachers undoubtedly ought to be innovative, committed and knowledgeable about the design process implementation strategies. Teachers must also have a clear understanding of the assessment standards and criteria for allocating marks. The design activity should be treated as an ongoing exercise consisting of guided learning episodes, nurturing of creative abilities of pupils continuous assessment, feed back and recording of marks at every stage of the design process. Such demanding and challenging scenario of classroom / workshop episodes motivated this study to find ways of improving teacher assessment techniques of the "O" level design project work in technical subjects in secondary schools in Zimbabwe.

Contextual Analysis

Chinamasa (2008:200) states: "Zimbabwe inherited a highly academic examination oriented education system which negatively affected attempts to implement changes in the school curriculum". Brady (1997) is also of the opinion that time spent on assessment can have a serious effect on curriculum as it is disruptive.

In Zimbabwe, the 'O' level design project in technical / practical subjects was introduced in 1993 as an additional examinable component in the form of a course work activity. The dictates of the syllabus mean also that the role of the teacher changed from that of being an authoritative source of information to that of a facilitator and guide (ZIMSEC "O" level syllabus). This is done to provide an environment in which pupils express their ideas through imagination and creative abilities (ZIMSEC "O" level syllabus for Woodwork, Metalwork, and Technical graphics).

Apart from guiding pupils to work through the design activity, the teacher faces a scenario in which he/she has to grapple with the core syllabus before end of year final examination. Added to this are the concerns raised by the ZIMSEC technical subject officer about teachers who were not supervising their "O" level candidates (ZIMSEC Circular no. D:\WP51 1998). The report states that some candidates hire outsiders to construct their articles /models without following the required design process. According to the report, this creates a mismatch between the article and what is presented in the design folio. The finished drawings and article were two different items that could not be compared. It was also observed that subject teachers pretended not to see this but their candidates suffered the consequences during the moderation exercise. In light of this, we as researchers notice that the notion of accountability are presented not only in terms of information against which to judge the performance of individual pupils, but in terms of "entitlement". As Cullingford (1997:122) notes; "There are performance targets against which schools are judged. Some are deemed to fail. But whose failure is it in the real sense? When schools "fail" pupils it is pupils who suffer."

These disparities indicate teacher deficiencies and challenges related to non-implementation of continuous assessment techniques. Teachers are expected to record marks on completion of each design stage. However, Shaida and Safaya (2005:169) qouted in Chinamasa (2008:200) blame examinations for lowering moral standards and motivating corruption when they wrote: "Ambition to get a pass in spite of basic deficiency prompts students to resort to copying and bribery offered to examiners". But Chinamasa (2008) says such an act is deliberate as people are aware of their in-capabilities but want to pass against all odds. Brady (1997:20) observes that there are also technical problems to be considered such as plagiarism

and other forms of cheating. In addition there is a large 'grey area' concerning the amount of help learners should receive for example, from teachers, peers, parents. In Brady's view there is a danger of a conflict between a desire and the use of project work as part of official assessment. Woods (1991), citing University of Cambridge Local Examinations Syindicate (1976) also notes, research studies have shown, though, the internal assessment results are not usually in congruence with those of the external assessment. To us as researchers the issue remains; 'What values do teachers hold about the practice of continuous assessment of the 'O' level design component?

The Problem

The premise that design education contributes to solving technological problems is accepted (Atchoarena and Caillods, 1999; Chinyamunzore, 1999; Masri, 1994). The lack of supervision and implementation of continuous assessment of pupil's design project work and the alleged cheating tendency is the problematic issue. Issues relating to missing marks, folios, many absentee candidates and simple mistakes involving basic principal and auxiliary dimensions are an indicator of teacher deficiencies in dealing with the dynamics of continuous assessment approach. Naturally, this assertion calls for an investigation to establish how teachers in practice assess the "O" level design component in technical subjects.

Research Questions

The study's main concern is the prevalence and application of continuous assessment of 'O' level design project work. In light of this, the following questions are pertinent.

1. How are teachers managing design lessons in classrooms workshops?
2. Are teachers trained to use continuous assessment technique with respect to "O" level design project?
3. To what extent have teachers adopted the advocated continuous assessment technique?
4. What problems/challenges, if any, are technical subject teachers facing in assessing project work?
5. What do they suggest as solutions to these challenges?

Literature Review

Most texts on assessment (formative and summative) begin with some attempt to define what is meant by this term, either theoretically or practically, or both. Continuous assessment, which is a form of formative assessment, has elusive definitions that have been used in academic debate. This suggests that the focus on this debate ignores the real problem the

limitations of teacher innovations, organizational prowess and the need for solutions that address these challenges. It is important to understand the diversity inherent in this term as it is impossible to discuss assessment practice without defining it. The art of assessment, according to Sutton (1991), is to find the best fit between, validity, reliability and manageability

Salvia and Ysseldyke (1991) describe assessment in education as a multifaceted process that involves far more than the administration of tests and examinations. It involves gathering, interpreting, recording and using information about pupils' responses to an educational task (Anderson, 1989; Salvia and Ysseldyke, 1991; www.assessment-reform-group.org.uk; Harlen et al, 1992). Lawton and Gordon (1996) further define continuous assessment as that assessment of a student's work throughout a course instead of, or in addition; to a formal terminal examination. According to Lawton and Gordon (1996) the purpose of continuous assessment is formative rather than summative, providing useful feedback to the student in order to improve future performance, but the marks awarded may also count towards a summative assessment. The researchers chose to adopt this definition for this study to guide critical analysis of emerging issues. Assessment, however, encompasses responses to regular work, specially constructed educational tasks such as the day to day exercises, field work, coursework, projects, practical work and the examinations respectively (Sutton, 1991; Harlen et al, 1992; Ogunniyi, 1984). Although the term 'continuous' implies a process going on without a break, in practice, this is not possible. The main emphasis here is that student evaluation and assessment of project work takes place as often as possible and without the need to wait until the end of the term, year or preset examination dates.

Continuous assessment takes into account the four learning domains namely: the cognitive skills, affective, psychomotor and interpersonal aspects of human behaviour (Chinyamunzore, 1989; Ogunniyi, 1984; Ahmann and Glock, 1975). Ogunniyi (1984), for instance , says continuous assessment must take into consideration the unique role of the local conditions of the pupils to be tested. Such conditions include the school setting, the socio-economic factors of the pupils and the culture of the community. However, the Assessment Reform Group (2003) as cited in Clarke (2005:75) states that:

"Learners need information and guidance in order to plan next steps in their learning. Teachers should: pinpoint the learner's strengths and advise on how to develop them; be clear and constructive about any weaknesses and how they might be addressed; provide opportunities for learners to improve upon their work".

Marking of projects is usually problematic. Just as Clarke (2005) states, marking is an especially difficult area, and many of the traditions of marking

have caused *regression* in student achievement. Clarke, therefore, proposes that teachers demonstrate quality through modeling during the course of any lesson. According to Clarke (2005) this ongoing oral feedback especially with practical subjects should focus mainly on checking against the success criteria and giving improvement suggestion. She further observes that for marking to really make any impact on students' progress, the students need to be involved in the assessment process and to make improvements on the actual work on which the improvement suggestion was written. Giving feedback either orally for a practical subject in the course of the lesson, or marking students' work in Clarke's view include:

- students knowing the learning objectives of the task and the extent to which they have fulfilled them;
- students knowing, in relation to the learning objective, what they could have achieved, or where to go next;
- showing students how to "close the gap" between current and desired performance. There is need to take on board student's perceptions and strategies; and
- most importantly, students need *time* to make the suggested improvements.

In essence, continuous assessment needs to be planned. The main objective is however, not to judge but to provide the students with maximum opportunities to learn, to demonstrate from time to time the knowledge, the skills and attitudes that they have acquired during teaching and learning process (Ogunniyi, 1984; Sutton, 1991). It is nevertheless a complex evaluation procedure which posses the following challenges as presented by Harlen et al (1992):

- Teachers must be trained in the operation of continuous assessment strategies;
- It is costly in terms of materials, time and energy;
- It requires up to date record keeping;
- A teacher's assessment of his/her students' work is not totally free of bias. This is more so in relation to the manipulative and especially the attitudinal skills;
- The traditional authoritative role of the teacher as the ultimate sources of information and decision-making tends to be more prominent the teacher has an important say in who passes tests and who does not. It is therefore, difficult to say whether students' creativity and resourcefulness can grow well in such an atmosphere; and
- There is the problem of comparing schools, when in fact the teachers, the conditions of learning, the backgrounds of students and assessment procedures are different, especially where there is no proper coordination with regards the interpretation of the marking scheme.

Because of its complexity continuous assessment is difficult to implement. The institutional limits of this technique are evident. It is not an easy evaluation procedure. It is an extremely intensive activity. Naturally, the question that follow as a result of the perceived complexity is: '*Can a teacher of thirty to forty students and with between twenty four to thirty six periods of thirty five or forty minutes a week cope effectively with the different dimensions and demands of continuous assessment?* Thus this study aims to establish the situation obtaining in the secondary schools in the area of technical subjects with the view to provide answers to the preceeding question.

Methods and Methodology

Research Design

This was a descriptive survey of classroom processes based on live observations of lessons. The study attempts to describe the ways teachers directs design activity (project work) at "O" level in technical subjects. The study was also exploratory and explanatory in nature. Assessment of the design project work at the end of each stage of the specified design process using continuous assessment technique of project work was the focal issue. The researchers used what Wragg (1994) describes as "symbolic interactionist" perspective by making use of both quantitative and qualitative approaches. This was to allow for a balanced interrogation of the issues of the phenomenon of continuous assessment. Magagula (1996:239) says; "objectivity does not mean representing things influenced by emotions, interests, prejudices and biases of the social actors but must bring into consideration that which others think is the issue and not ignoring or controlling it as an intervening variable." Thus in this study the researchers were persuaded to accept that both approaches need not be seen as polar opposites as they can often complement each other (Fry, Chantavanich and Chantavanich, 1981; Wragg, 1994; Magagula,1996; Mararike ,1999; Punch, 2000). The approach was therefore naturalistic as researchers observed life as it really was, ruling out experiments where by teachers might have been asked or forced to try out particular method of working to see what the consequences would appear to be. To fully comprehend the picture, the study employed a variety of data gathering methods which included spot observation, document analysis, face to face interviews with teachers and questionnaires for both teachers and students.

Data Collection Methods and Instrumentation

The survey involved 13 teachers and 142 students from five conviniently selected secondary schools in Makonde District of Mashonaland West province. Questionnaires were the main instruments used to collect data from both teachers and students. The questionnaire for teachers had items on demographic data such as number of classes supervised, average size of

class, total number of students supervised, teaching load, major area of specialization, number of years (experience) teaching "O" Level design component and qualifications. This information was considered critical for effective management of continuous assessment technique and interpreting the marking scheme. Other key issues investigated include challenges faced in both the teaching and learning of design component and marking of the projects. In addition, an observation checklist schedule was used to collect data on items such as record of marks, scheme of work and marking scheme. Observation was mainly non-participant to allow the observers (researchers) to understand and explain how teachers organized the teaching of design activities, marking and whether recording was being done usually by first observing. Interviews allow the taken for-granted to be explored in greater detail (Wragg, 1994). As researchers we also used observation in order to collaborate our observations with interviews and questionnaires, hence the use of document analysis and observation checklist as research instruments. Our focus as researchers (as primary instruments) was to observe what the pupils were doing and what teachers did or both.

Document analysis focusing on schemes of work, logbooks (folios) and mark schedules was done noting salient points of interest to issues under investigation. According to Wragg (1994) a good qualitative analysis of classroom behaviour involves rigorous scrutiny of activities or events to accurate perception. The researchers could not interpret events as they wish to see them, but as was determined by facts on the ground.

Population, Sample and Sampling Procedures

Staff returns and student enrolment figures (ED46B) for Makonde district for the month of February, 2009 showed that the 5 conviniently selected secondary schools had a total of eighteen (18) teachers of technical / practical subjects. The 'O' level pupil enrolment studying technical subjects was 520. The five schools were selected on the basis of easy accessibility and that they also offered subjects targeted in this study.

Thirteen teachers from the five schools in Makonde district took part in this study. This figure formed the sample and was therefore considered as representative. Sampling was purposive. As researchers, we only wanted those 13 teachers teaching 'O' level design component at the time of study. However, simple random sampling was used to come up with the 142 students who participated in the study.

Data Collection and Procedures

The process of data collection, including questionnaire administration, conducting informal interviews and completion of observation checklist schedule took two weeks. Questionnaire administration was done by the researchers. Informal interviews with teachers were a face-to-face

discussion at the office or workshops during the working hours of school business as follow-ups to the lessons observation. Recording was done by taking notes and by reconstruction after discussions through triangulation of research notes. Observation was done covertly using an observation checklist prepared in advance and it spelled out items such as mark recorded, availability of mark sheet, specific design objectives clearly stated in schemes of work and presence of marking scheme.

Findings and Discussion

Factors Affecting Teacher ability to Implement Continuous Assessment

Each teacher supervised 2 classes averaging 20 pupils and the highest number of students supervised per class was thirty (30). Teaching load varied from 20 to 36 periods of 35 40 minutes per week. Some had additional subjects apart from other responsibilities, as head of department. Teachers mostly overloaded were those teaching Technical Graphics and Woodwork whose classes were as big as forty-five (45) pupils. The majority of teachers had the Certificate of Education (CE) which is the minimum qualification required to teach at secondary level in the relevant subject. Chivore, (1994) says research to date has not been conclusive with regards to the relationship between length and level of teachers' educational qualifications and teacher effectiveness as well as pupil achievement. Nine (9/13) of the teachers had taught and marked the "O" Level design component for more than eight years. This number includes five (5) degree holders in the relevant areas of specialization. This information, however, represents a healthy composition of the teaching staff in terms of both qualifications and experience in teaching 'O' level design in technical subjects.

The Effects of Large Class Size on Supervision and Marking of Projects. Data collected through observation checklist schedule, showed that only two teachers had done some acknowledgement marking with visible ticks or had put their signature on some pre-work done by pupils, even though no recording of marks had been done. It was presumed oral feedback had been given during the course of the project work for the basic needs of learning objectives that had been met even though the schemes of work had not specified these. The majority of the teachers had not started marking preferring to do it when all students have handed in their projects. Clarke (2005) says marking is a difficult area and is traditionally known for causing *regression* in student achievement. Clarke (2005) further observes that, finding time to mark students' work is a major headache for secondary school teachers. Teachers choose to mark certain number of pieces in depth. This raises the questions of manageability, especially for teachers who take large groups [The Office for Standards in Education (OFSTED, 2003)] as is the case with teachers of Technical Graphics and Woodwork.

Teacher Supervision, Pupil Involvement in Teaching/Learning and Assessment of Project Work

A collapsed scale indicating agreement, neutral and disagreement was designed specifically for students as follows: **Agree** = 1 and 2; **Neutral** =3; and **Disagree** =4 and 5. Twenty items based on the specified scale showed that students agreed in 13 of the 20 items that asked for their involvement in the assessment of the project work and teacher's willingness and commitment to teaching and assisting pupils in learning design concepts. The students indicated that teachers supervised, marked their work and equally benefited from teachers' constructive criticism of their work. The students were neutral regarding the following two statements.

- Regarding the statement that pupils have difficulties in getting access to workshop whenever they are free to work on their projects. The pupils' responses gave a statistical mean of 2.94 (almost neutral) and a mode of 3 (neutral).
- Concerning the statement that there is a lot of cheating associated with design project work. The result gave a mean of 3.21 (neutral), a mode of 3 (neutral) a standard deviation of 1.4 and a standard error of .118. The findings were different regarding the following five statements:
- Students disagreed with a mean of 3.25 (almost neutral), a mode of 4 (disagreeing) and a standard deviation of 1.31 to the statement that teachers record marks after every stage of the design activity.
- Regarding the statement that, 'teacher does not insist on pupils to re-do the work especially where it is not done properly, the students disagreed with a mean of 3.80 (disagreeing), a mode of 5 (strongly disagreeing) and a standard deviation of 1.69.
- Students also disagreed with a mean of 3.37 (almost neutral) a mode of 5 (strongly disagreeing) and a standard deviation of 1.37 to the statement that: I benefit more from consulting other people outside school.
- When it concerns the statement that: I am interested in learning design but I hate making the model, the students disagreed with a mean of 3.37 (almost neutral), a mode of 5 (strongly disagreeing) and a standard deviation of 1.48.
- Concerning the statement that: The teacher gave us some design problem to solve in term one of the year before the final project question was received from ZIMSEC students disagreed with a mean of 3.29 (almost neutral) and a mode of 5 (strongly disagreeing).

The purpose of marking is to give feedback to students about their work. Research has, however, shown that it is difficult to give oral feedback in a class of 35 (Assessment Reform Group, 2003; Clarke, 2005). However, students need to be involved in the assessment process and to make improvements on the actual work on which the improvement suggestion was written (Clarke, 2005). The Assessment Reform Group (2002) further

reports that assessment that encourages learning fosters motivation by emphasizing progress and achievement rather than failure.

Challenges Faced by Students

Students faced a number of challenges in various areas. The number of students who specified areas of difficult is shown in brackets ( ). In particular students faced challenges with regard to: shortage of materials to make models (64); time (65); lack of support from school (37); lack of constant teacher attention as assurance (33); and, lack of skills (28).They also cited the following factors as major source of their difficulties: lack of finance to purchase material (40); lack of supportive environment (31); lack of serious learning and teaching (20); lack of skills (16).

Challenges Faced by Teachers, their Preparedness, Readiness and Adaptability of Marking Scheme.

Teachers faced a number of challenges ranging from teaching resources (books and other materials), limited time allocated to practical subjects, lack of knowledge in interpreting parts/sections of the marking scheme, large class sizes to receiving question papers late from ZIMSEC. While the majority of the teachers acknowledged that continuous assessment was constructive, they indicated that it was a difficult exercise to implement because;

1. Students will be working on different stages of the design process and abilities also differ.
2. Sometimes students wish to change certain areas of their design when such areas have already been marked and it discourages them because the mark would have been determined.
3. Inadequate time during the normal working hours.
4. Pupils/students usually have no time to finish their work properly due to mid-year examinations.
5. Time is shared between other school duties/activities.
   The different work rates (pupils finishing each stage at different times) posses specific challenges and usually puts pressure on the teacher resulting in some inconsistencies in mark allocation especially in those areas where the marking scheme was said to be unclear.

Regarding how often they asked their students to submit project work for assessment, teachers indicated varying time intervals as follows: daily (1); once a week (5); fortnightly (1); after every stage of the design activity (5); and rarely [(on request by ZIMSEC) (1)]. When teachers were asked if they reckon (value) design project work a necessary bother at "O" level, nine (9) of the teachers indicated "**Yes**" and four (4) said it was not (**No**). The latter included senior teachers who had been in the field for 11-15 years teaching the design component.

Most of the teachers were doing the work because it was mandatory (part of their duty) but indicated that there were not readily prepared and willing to continue working on something they felt should be remunerated. More so, there were no in-service programmes to help them interpret the marking scheme. Three teachers cited lack of support from their heads of schools who they felt had a negative attitude towards technical subjects. They alleged that school heads continue to allocate technical subjects to weak classes. Time was also cited as a major handicap. Nine (9) of the teachers indicated that they required in-service training workshops to help them implement continuous assessment technique of project work - an indication that even the senior teachers were (very likely) building on the same mistakes over the years. Eight (8) of the teachers also indicted that time allocated to teach the subject by school authorities and the dates papers were being received from ZIMSEC gave them very little autonomy to try out other alternatives. The following response extract from three of the teachers sum up the challenges related to time factor on implementation of continuous assessment as these represents two pole positions prevailing on the ground in schools.

Teacher 1: "The project work is very challenging, it involves a lot of time. Besides there is a lot of theory work and drawing to cover, so two periods per week are not enough".

Teacher 2: "I think instead of 6 periods provided by the school, 8 periods should be enough to cover the theory, practical and design component.

Teacher 3: "The core syllabus on its own, besides the design component, is too long to be covered during the course of the study".

Themes Emerging from Teachers' Perceptions of the Marking Scheme.

Teachers indicated they had difficulties in marking projects during the course of the design activity due to limited time. Marking was therefore done under pressure to meet deadlines as examination questions are usually received late in May or June of the final year. Teachers also indicated that ZIMSEC was not supplying enough mark sheets and that there was no proper standardization before marking takes place at school level. One teacher wrote *"there is lack of adequate knowledge on the procedure of marking these projects other areas of the marking scheme are not clear in terms of their demand and hence allocating marks can be subjective. We want a more informative marking scheme"*. In particular, teachers indicated the following as more problematic areas of the marking schemes: *experimentation and testing of ideas (analyses of ideas); commenting on recommendations; development of chosen solution; assessment of experiments and testing of ideas; marking the model; awarding marks where ranges are big, and evaluation of final artifact.*

The Impact of Time on Assessment and Quality Concerns.

Time as an element affects continuous assessment for learning in that it has become a "bolt on" or stand-alone activity, and is therefore not integral to all learning. Time limitations appear to have created a blind panic in both teachers and students about having to race through everything (teaching and learning activities) because dates for moderation are usually fixed. Although teachers indicated that continuous assessment of project was constructive, but is equally destructive, a view held by Brady (1997) when they admit that the design activity was time-consuming and affected their progress with regards to core syllabus.

The impact is that both understanding of the design activity as problem solving and development of skills stops due to forced coverage of core syllabus amid a sea of confused faces. It is clear that some of the candidates leave school with the belief that design project work is something that they simply could do overnight. Time limitations also imply students rarely get enough space to make any such improvements on their work because of the teachers' feeling of pressure to get on with coverage of core syllabus.

Looking at a scheme of work as a whole rather than in lesson chunks as the researchers observed, showed that teachers do not adequately prepare for design lessons particularly the setting of actual learning objectives and assessment criteria. There were no clear building blocks for learning and continuous assessment of project work of pupils in technical / practical subjects that was taking place.

Analysis and Interpretation of Results

Teachers may certainly be recognized as best placed to make professional judgments about practice (McNiff and Whitehead, 2006). It is only prudent that teaching and learning principles and practice come first; how to assess the work second, but the assessment procedure should not dictate practice. One of the daunting aspects of the coursework assessment by teachers is finding the best ways of breaking down and allocating marks where relatively large ranges are given in the marking scheme. The teacher is, therefore, unlikely to develop consistency of judgment if he/she has difficulties in interpreting the marking scheme. Furthermore, teacher assessment has the danger of 'halo effect' and of subjectivity and social control (Brady, 1997). The move towards greater involvement of teachers in the assessment of pupils' project work can be seen as enhancing the professional role of teachers, but it has also had the effect of greatly increasing their workload.

There are also eternal problems associated with teaching and marking the design component such as:

- Some teachers always see negative aspects as they feel they should be

paid for marking the coursework. This is because moderators are being paid by ZIMSEC for the job they are doing.

- There are teachers who do not ask for help an indication associated with lack of confidence, fear of seeing a failure, perception linked with older staff who expect that they should know (Clarke, 2005). The other reason is that they are demoralized by poor packages.
- Viewing new initiatives as more work. Teachers who claim they are overloaded and assessment of project work means asking them to do too much.
- Design is given to weak students. Teacher's fear of trying new and challenging work with average or weak students.

Concluding Observations

Currently, teachers see themselves as working in practice context but not in a knowledge context and marking tends to be seen as a form of professional development rather than a form of practical theorizing. It is clear from the findings listed below that teachers are not contributing to both practice and theory. In particular, this study reveals that:

1. There is no continuous assessment of project work taking place in schools;
2. Teachers are not adequately trained to implement continuous assessment technique;
3. Teachers need assistance in interpreting the demands of the marking schemes, in particular, breaking down and allocating marks;
4. There is a definite need for Zimsec and Ministry of Education Sport and Culture to organize workshops to staff develop the practical subject teachers in the area of continuous assessment and interpreting the marking scheme;
5. There is a critical shortage of teaching and learning resources;
6. Some teachers are overloaded supervising large classes;
7. There is very little preparation being done towards the teaching of design component in the classroom; and,
8. It is difficult to give oral feedback during normal classes session especially with large groups and that time to teach, learn and assess the design component is a major handicap. However, teachers perceived continuous assessment as a constructive technique despite the numerous challenges they have in trying to implement the technique. The design curriculum, at the secondary school can therefore, be said to be too much the servant of the examination at the expense of developing skills and knowledge understanding.

Recommendations

This study recommends, on the basis of the findings that:

1) ZIMSEC circulate the examination paper to schools in November /December to allow the 6 months of working on the projects before due date of submitting marked work.
(2) Workshops should be organized by ZIMSEC for in-service training of the teachers on handling the design component, and the implementation of continuous assessment technique and interpretation of the marking scheme.
(3) Schools should increase contact time from two periods to at least six or eight periods per week to accommodate both the design component and core syllabus.

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